

FIG. 1

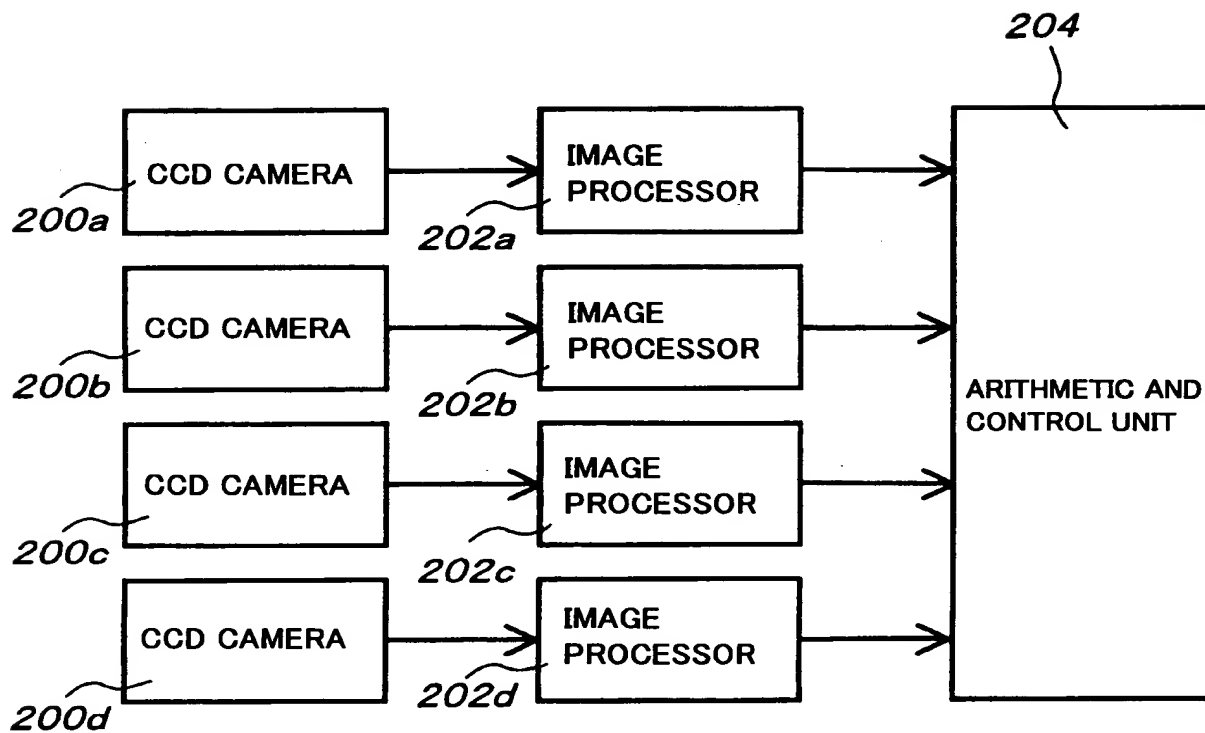


FIG. 2

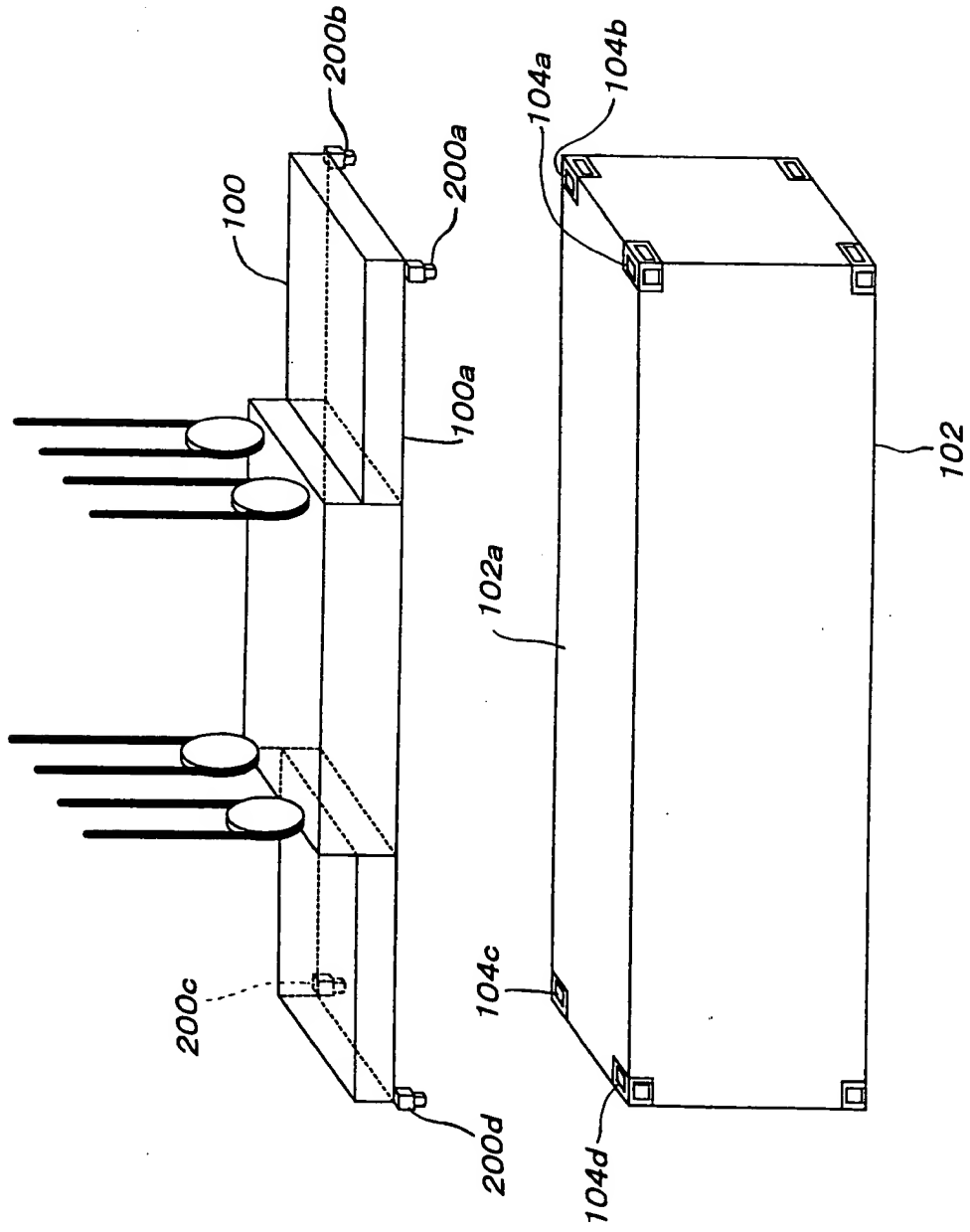


FIG. 3

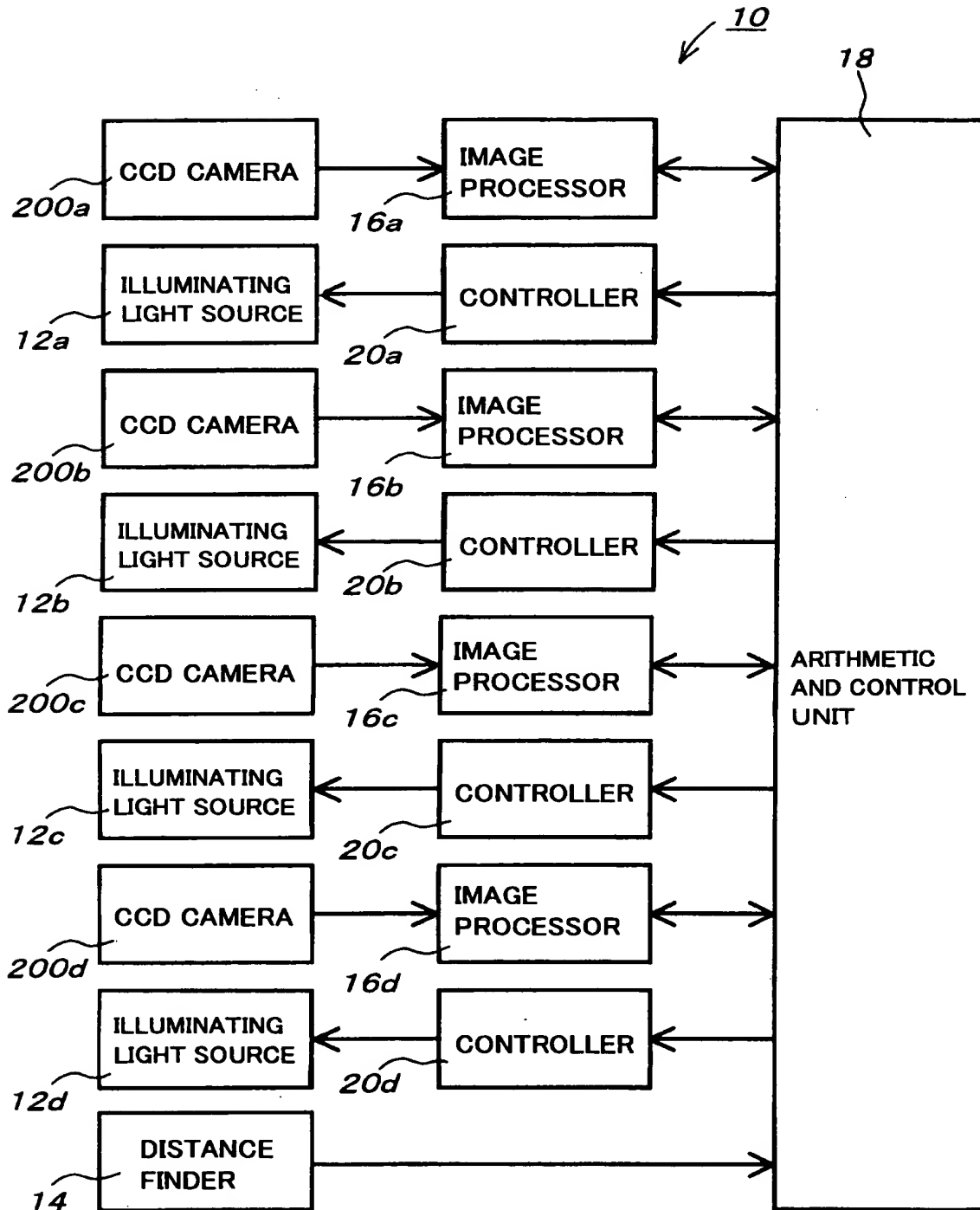


FIG. 4

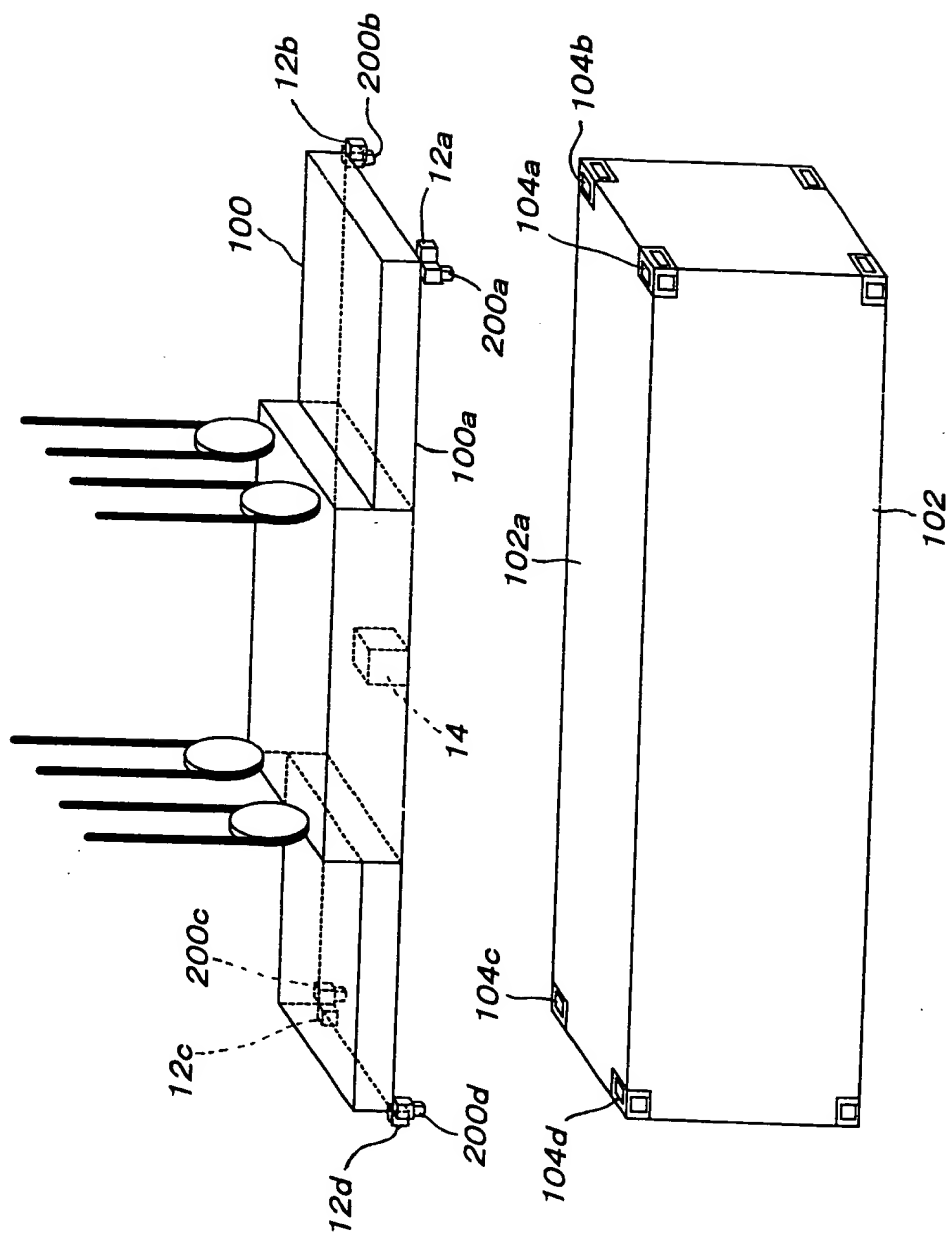


FIG. 5

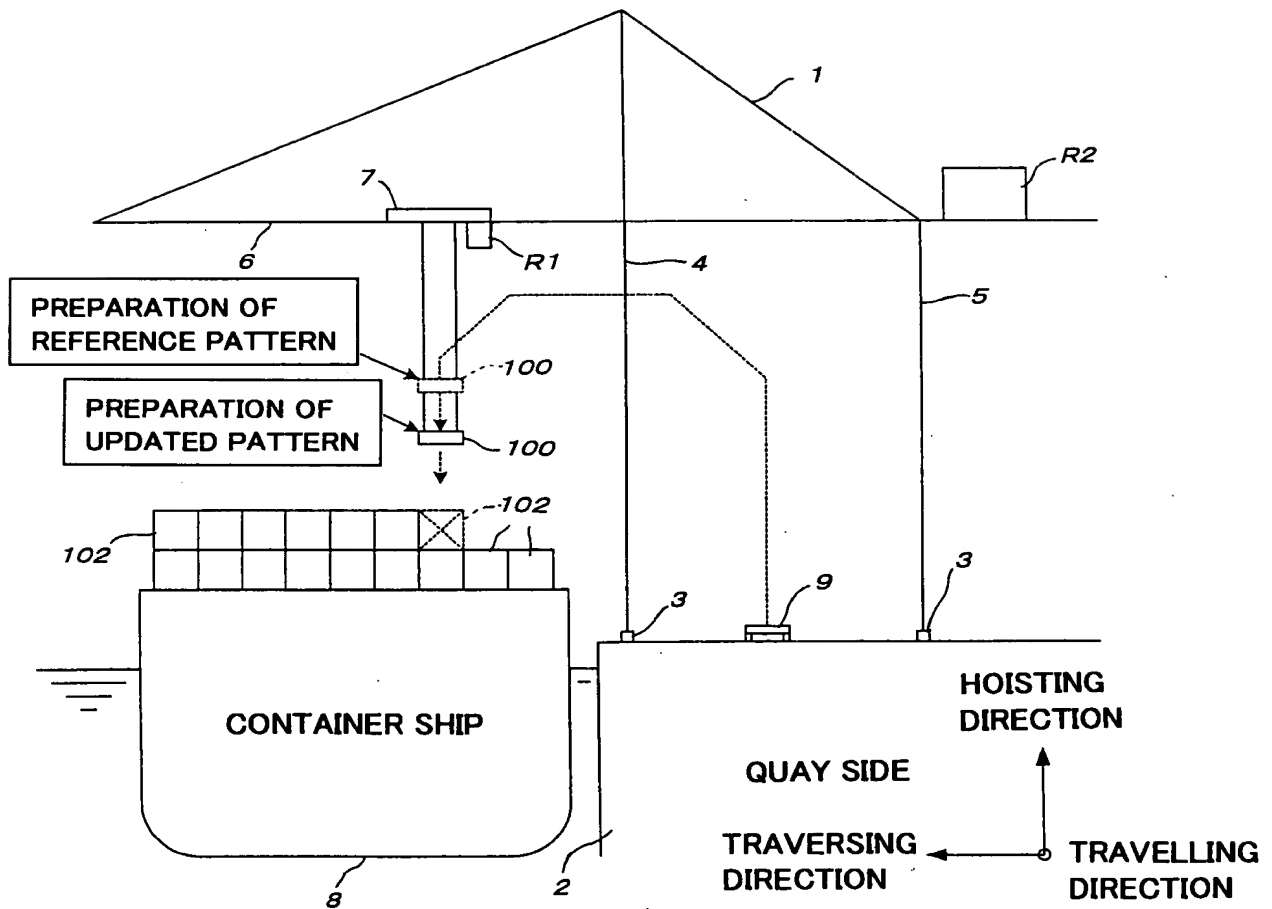
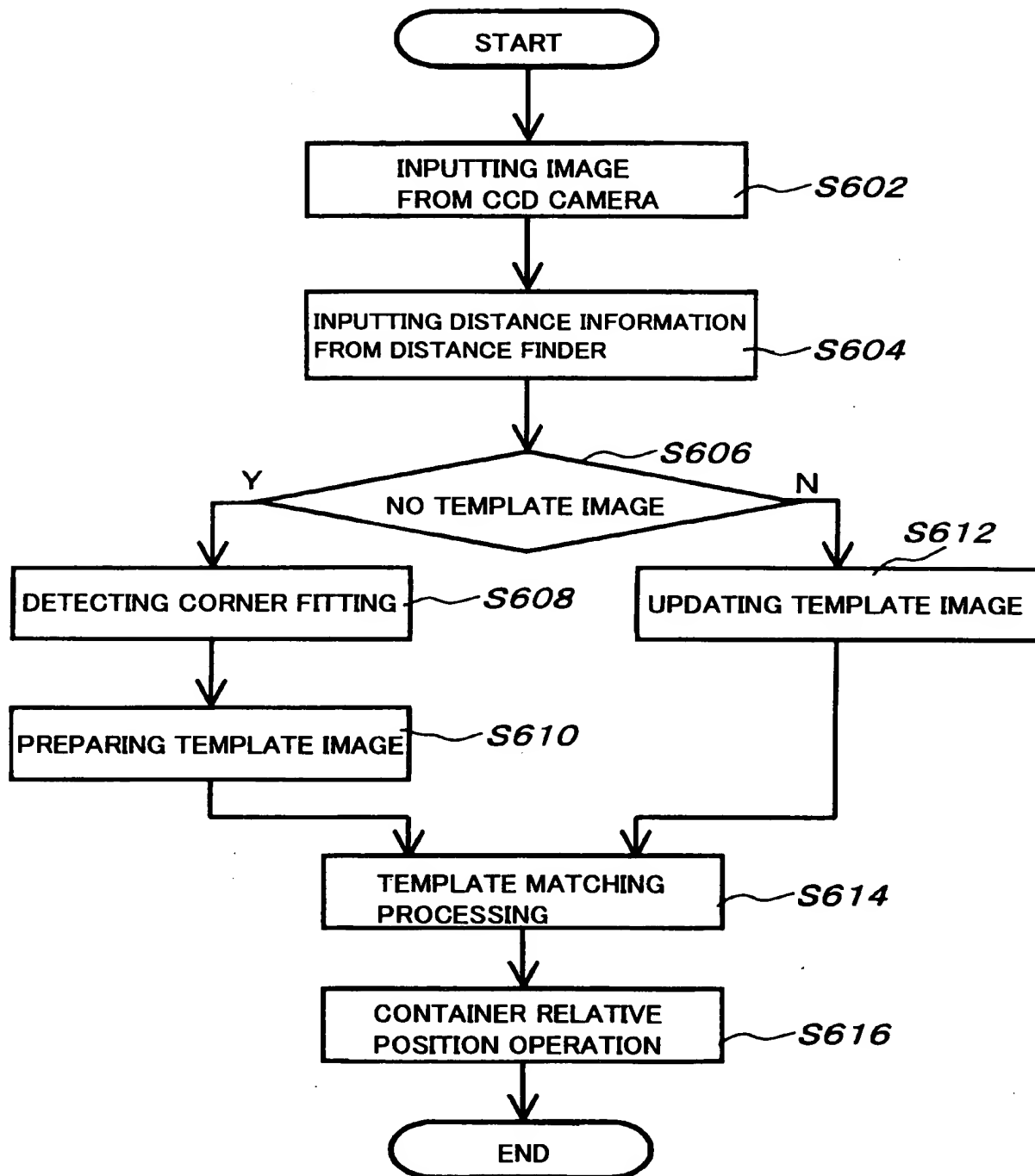


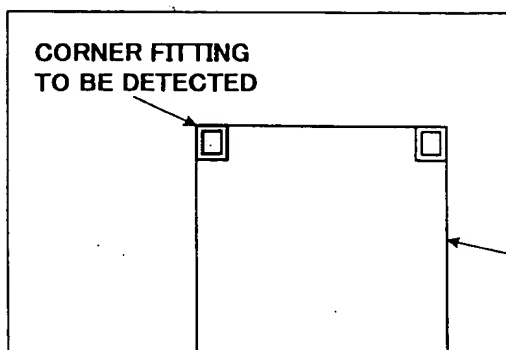
FIG. 5

FIG. 6



0004729.072504

FIG. 7(a)

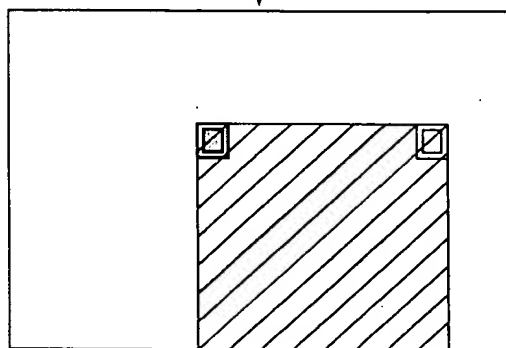


(a) ORIGINAL IMAGE

CONTAINER LOAD CARGO



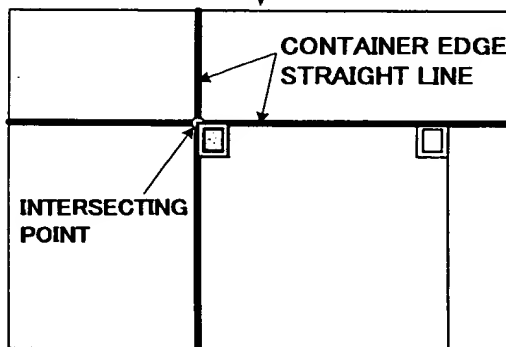
FIG. 7(b)



(b) DETECTION RESULT
ON CONTAINER
UPPER SURFACE



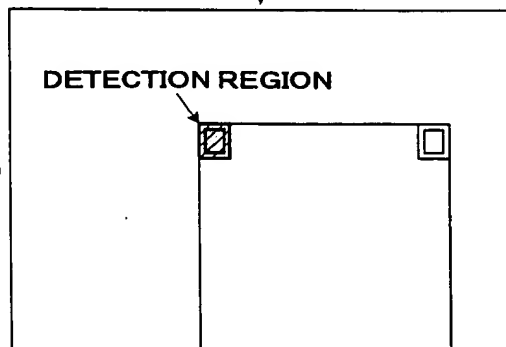
FIG. 7(c)



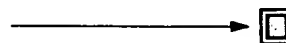
(c) RESULTS OF LINEAR
APPROXIMATION OF
CONTAINER EDGE AND
INTERSECTING
POINT DETECTION



FIG. 7(d)

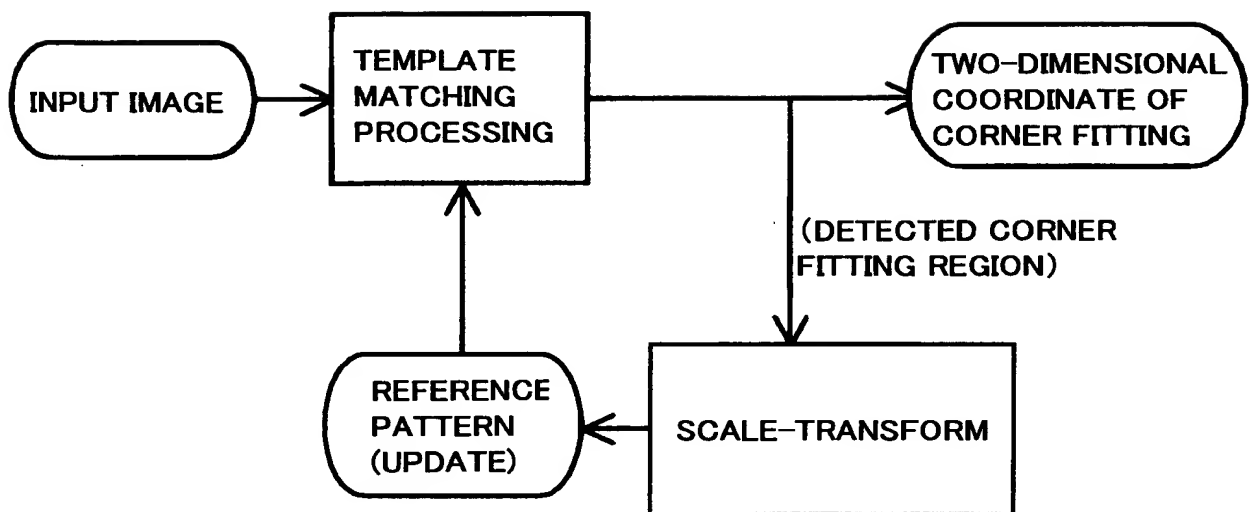


(d) RESULT OF CONTAINER
FITTING DETECTION



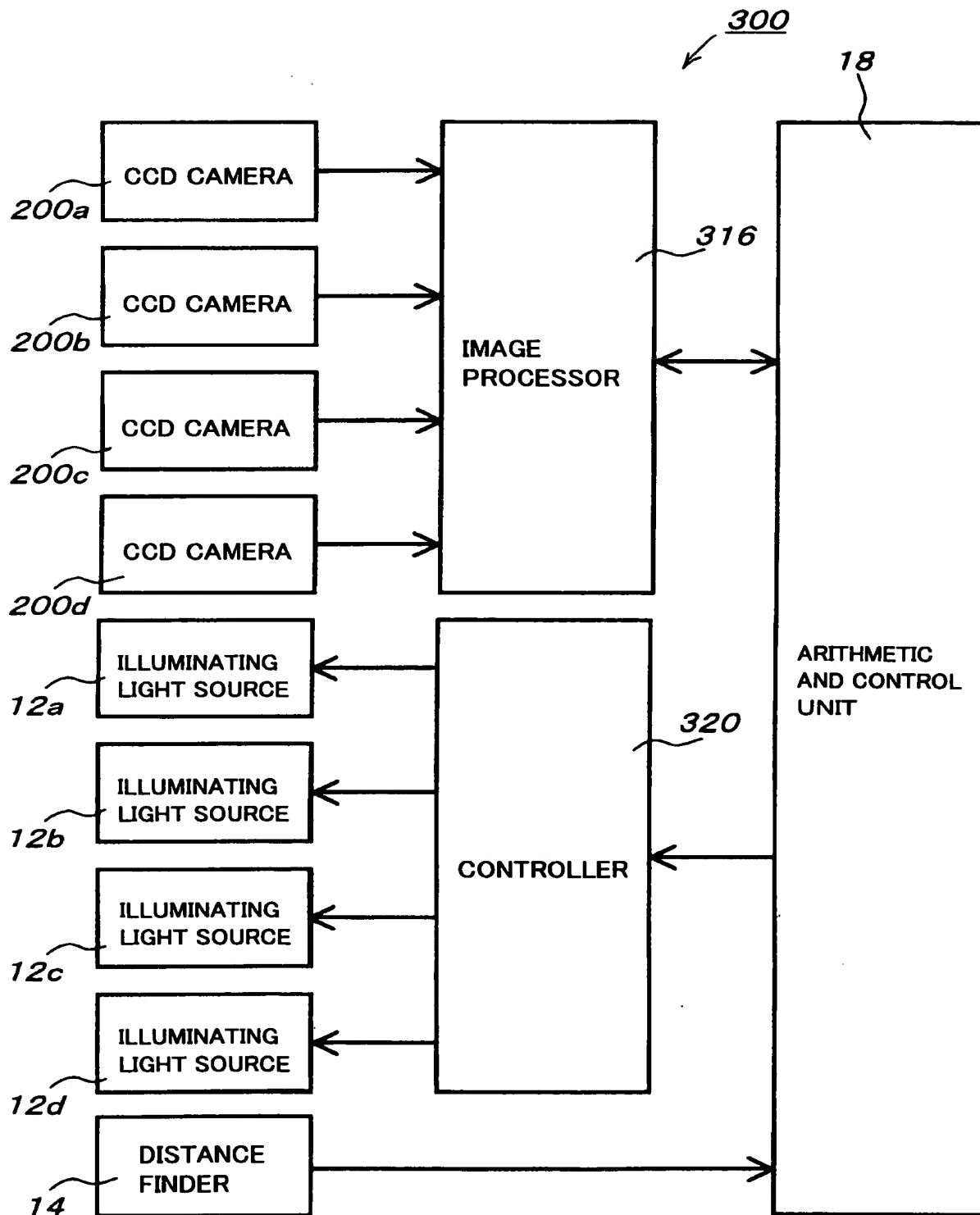
STORAGE AS TEMPLATE IMAGE
(REFERENCE PATTERN)

FIG. 8



105220 627660

FIG. 9



00014720-02504

FIG. 10

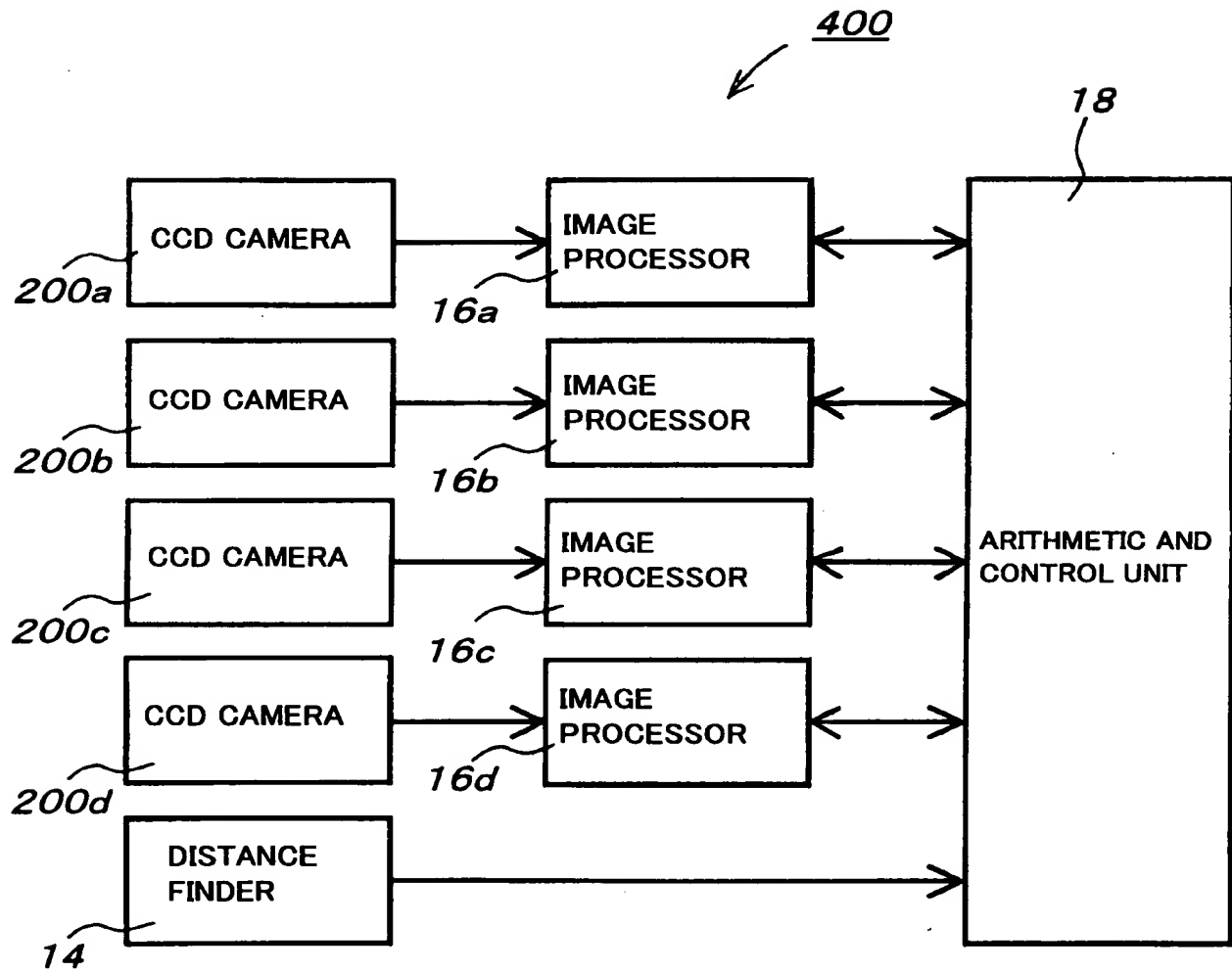


FIG. 11

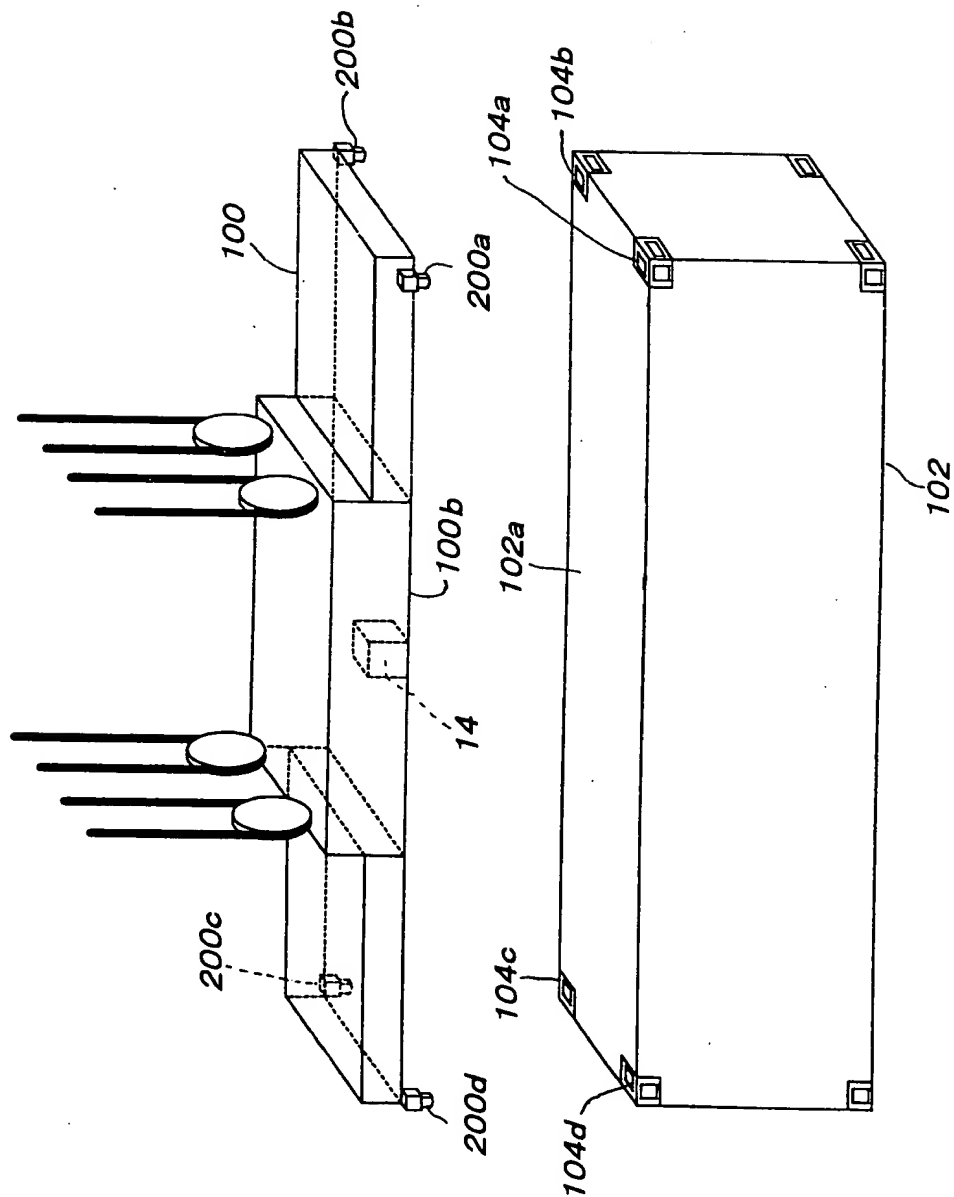


FIG. 12

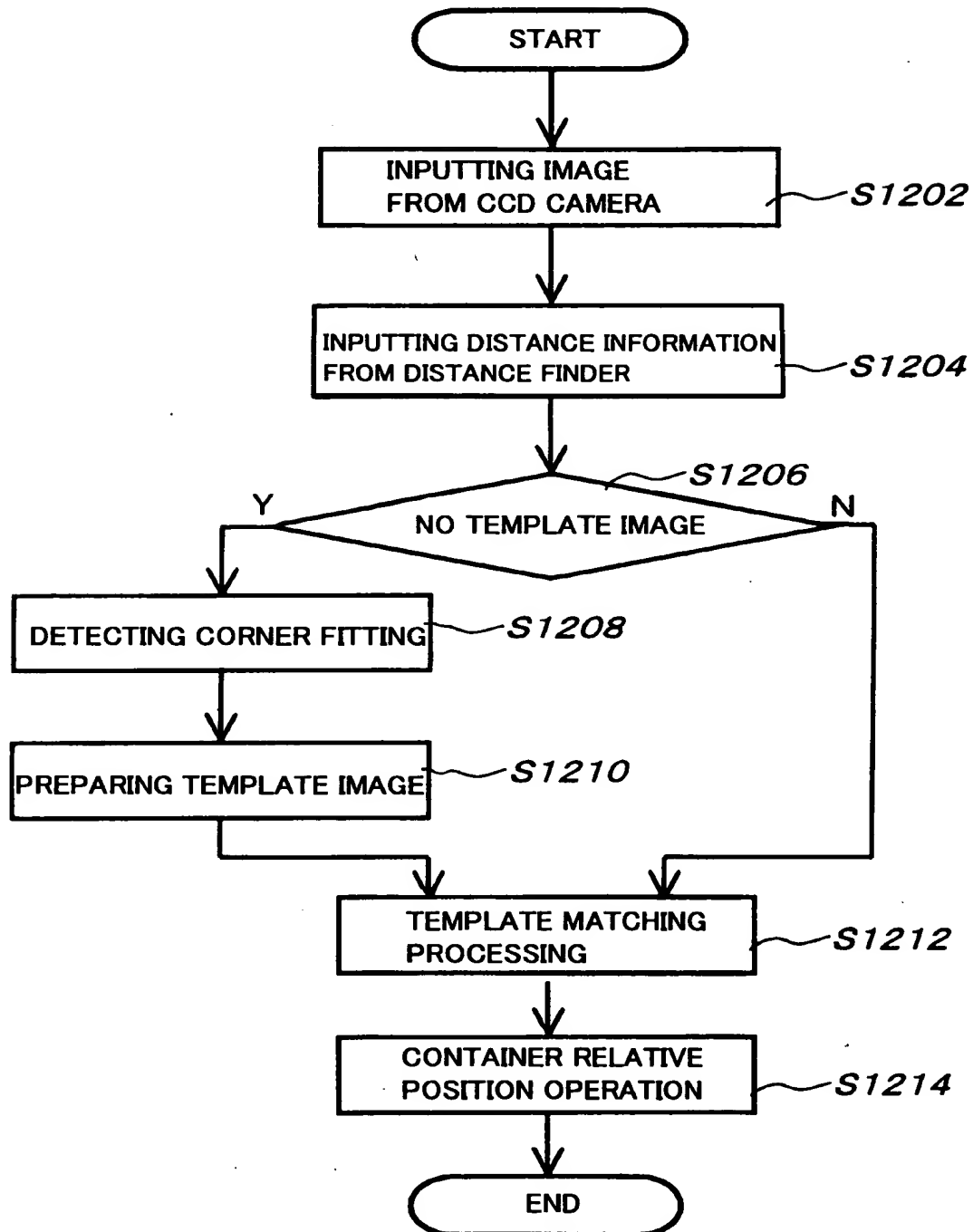


FIG. 12

FIG. 13

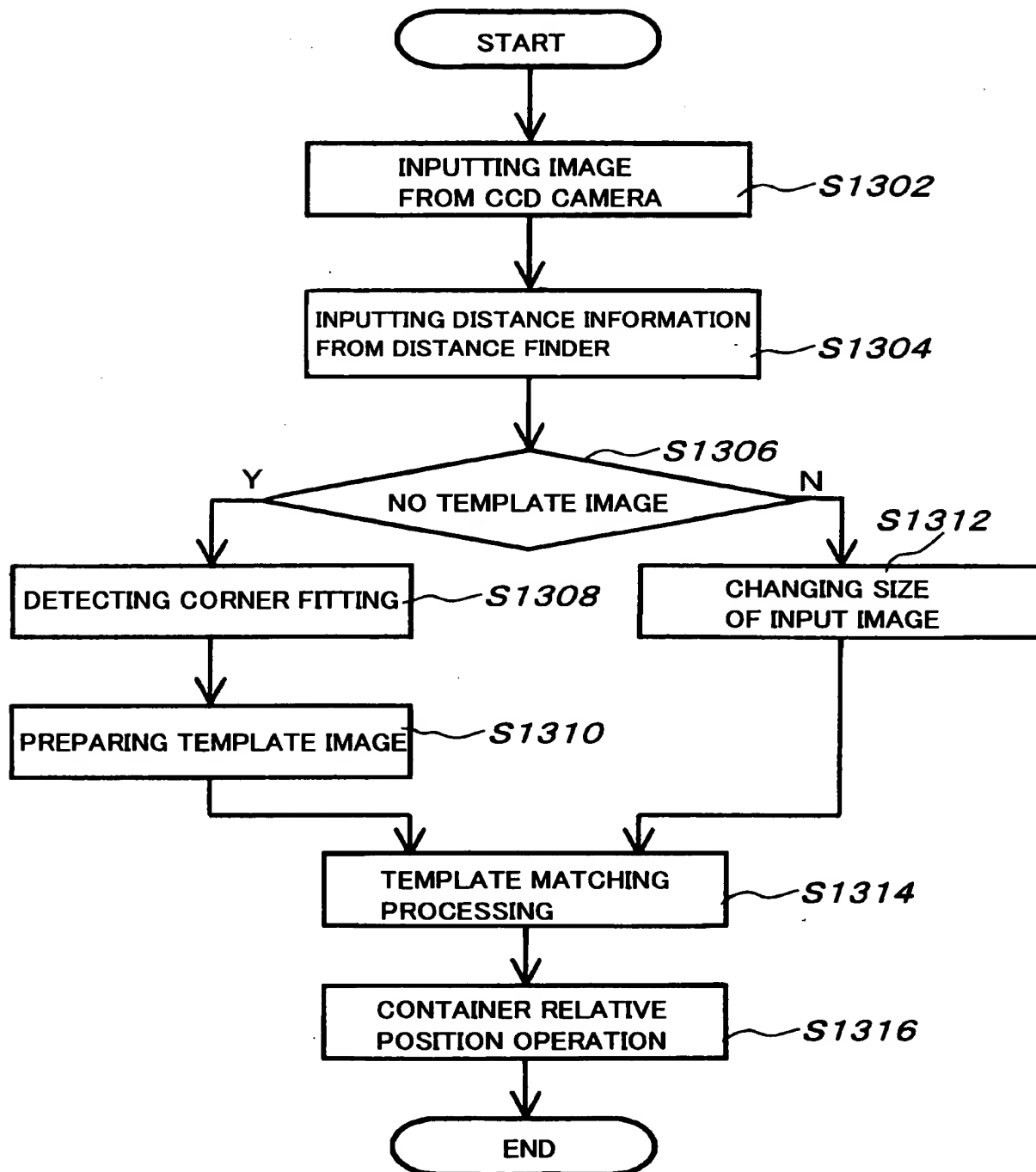
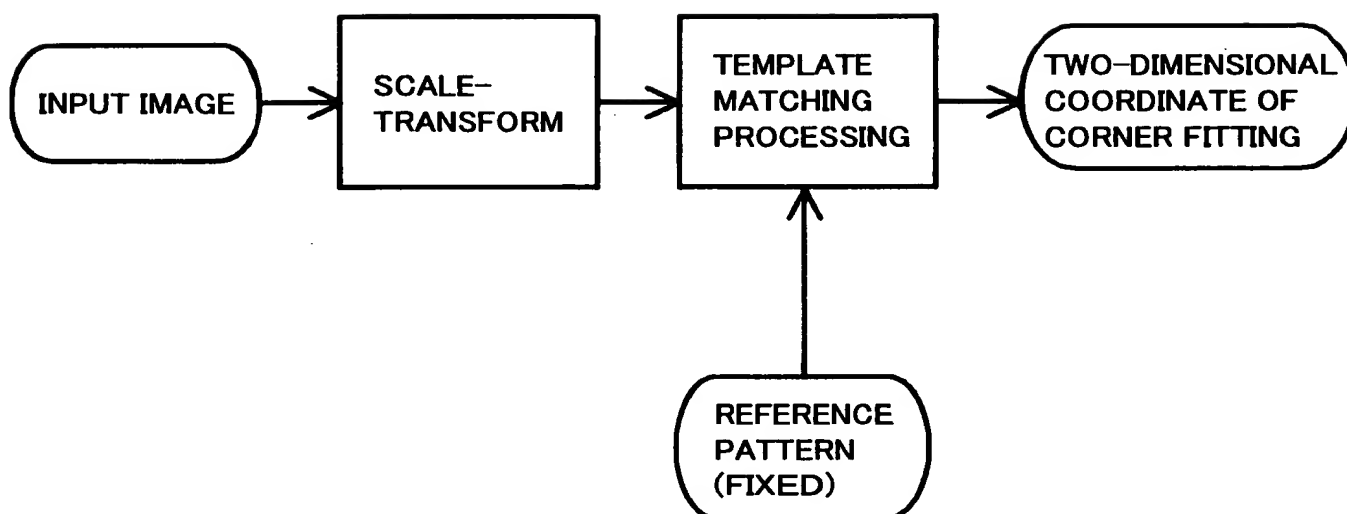
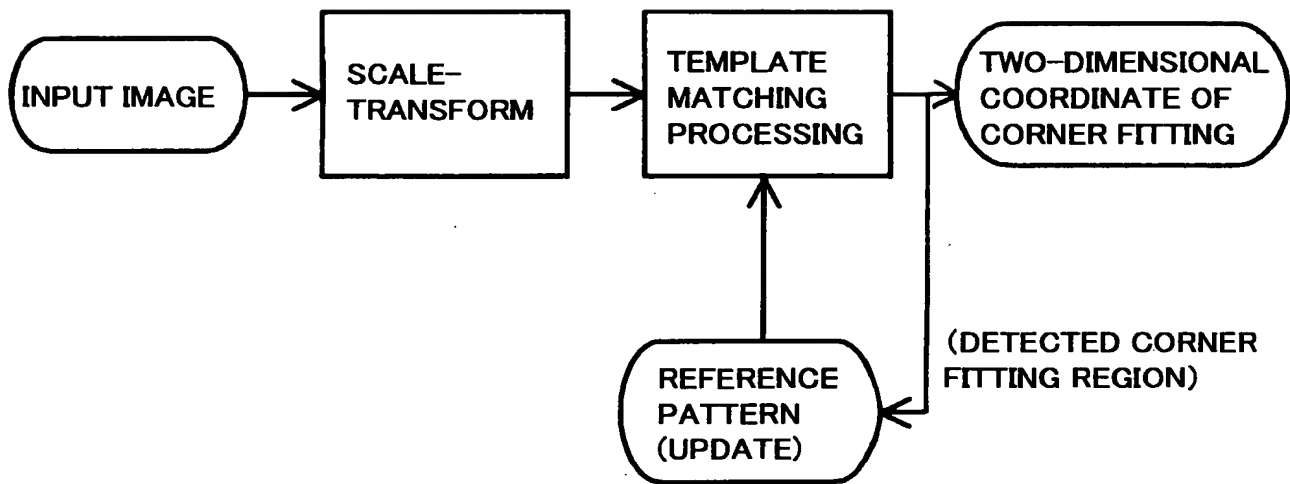


FIG. 14



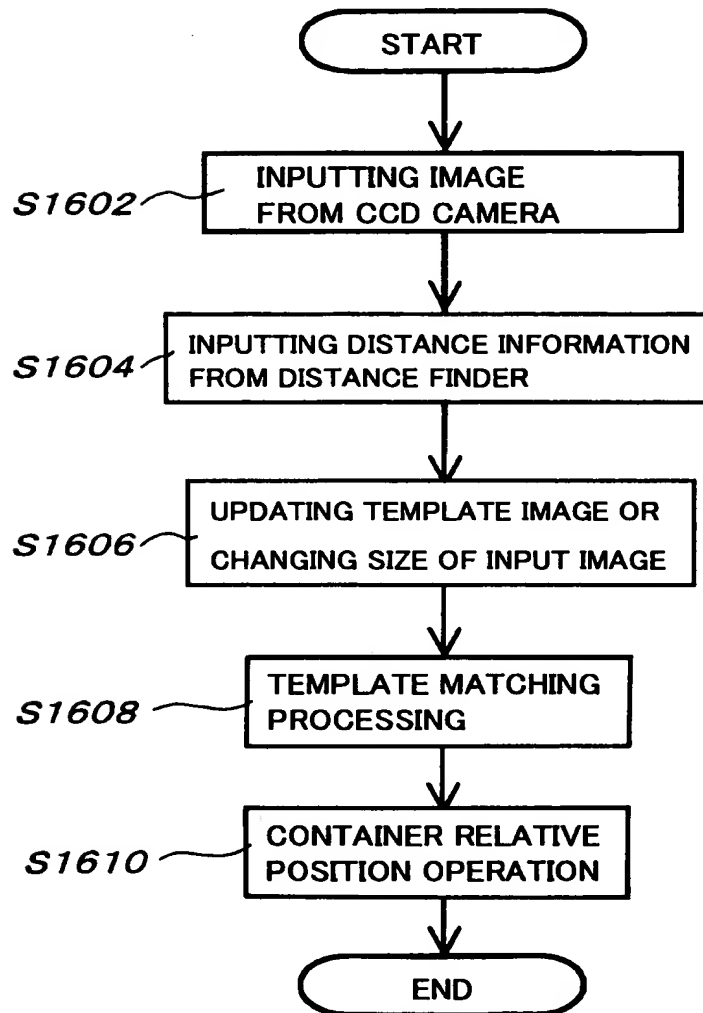
0004428-02201

FIG. 15



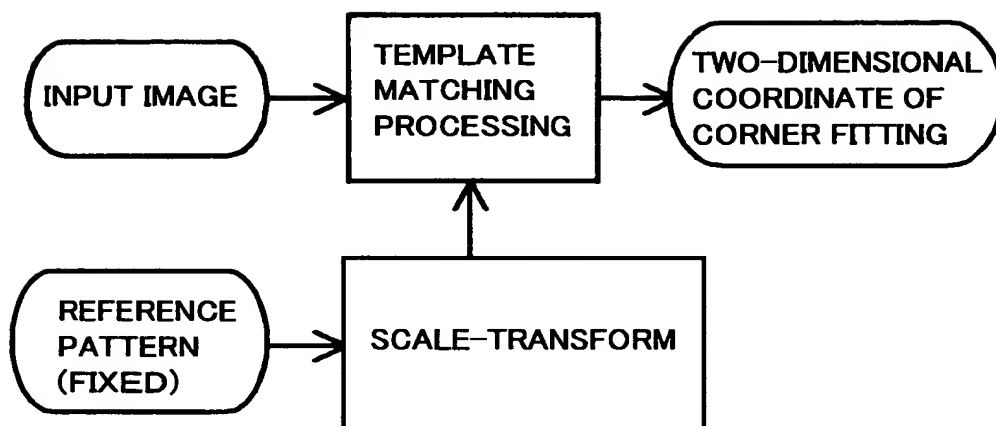
1004128.0000

FIG. 16



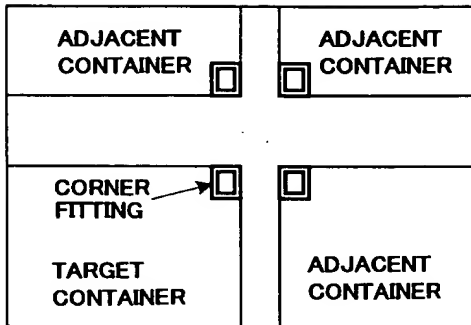
00041720 1072501
155220 0227600

FIG. 17



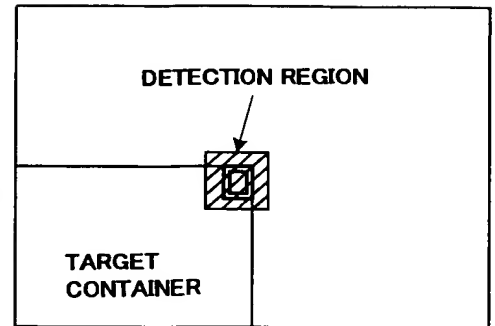
40520-34700

FIG. 18(a)



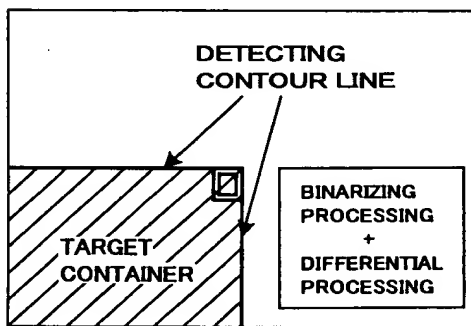
ORIGINAL IMAGE

FIG. 18(d)



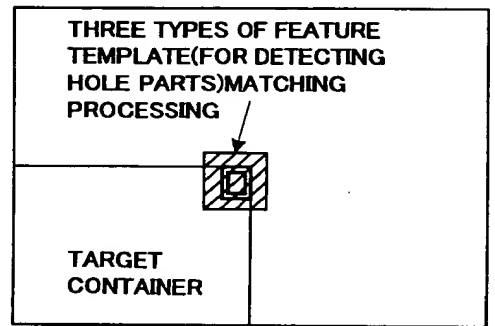
SETTING-UP OF
DETECTION REGION

FIG. 18(b)



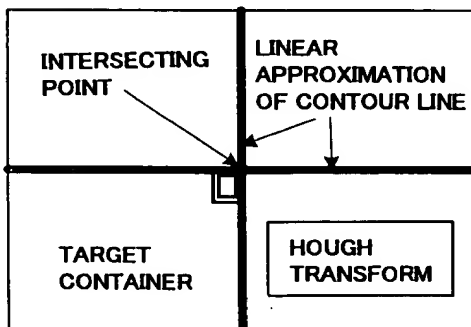
DETECTION RESULT ON
CONTAINER UPPER SURFACE

FIG. 18(e)



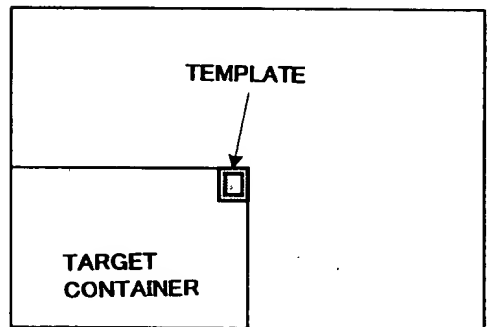
FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING

FIG. 18(c)



RESULTS OF LINEAR
APPROXIMATION OF
CONTOUR LINE AND
INTERSECTING
POINT DETECTION

FIG. 18(f)



RESULT OF TEMPLATE
PREPARATION

FIG. 19(a)

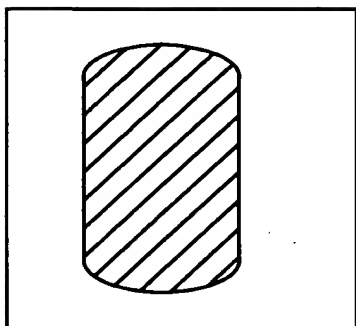
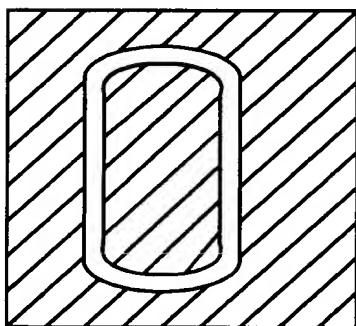
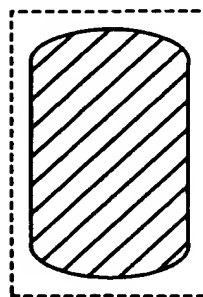


IMAGE DATA HAVING LOW
CONCENTRATION IN HOLE PART

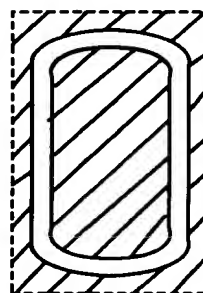


RESULT OF
DIFFERENTIAL PROCESSING

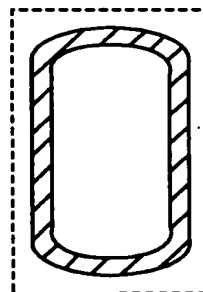
FIG. 19(c)



FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
IMAGE 1



FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
IMAGE 2



FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
IMAGE 3

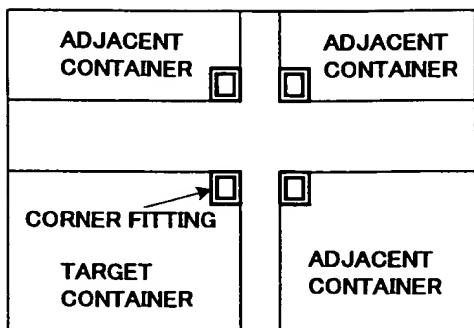


FIG. 19(d)

FIG. 19(e)

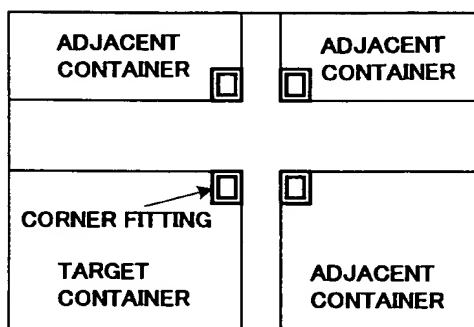
FIG. 19(b)

FIG. 20(a)



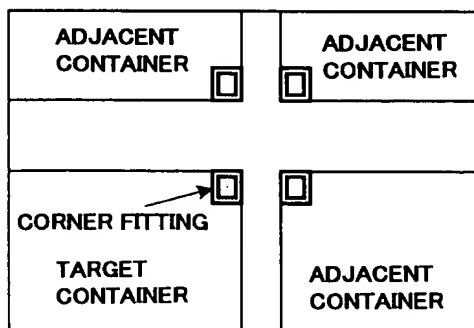
ORIGINAL IMAGE

FIG. 20(b)



FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING

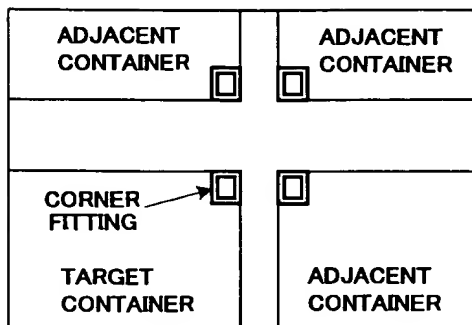
FIG. 20(c)



RESULT OF TEMPLATE
PREPARATION

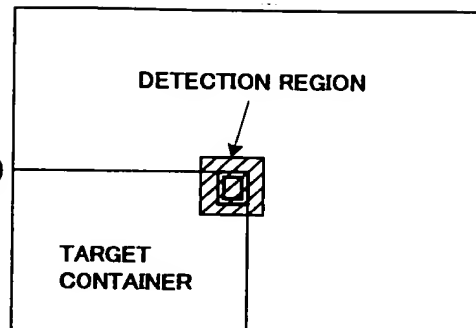
THREE TYPES OF FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING
(WHOLE IMAGE DATA)

FIG. 21(a)



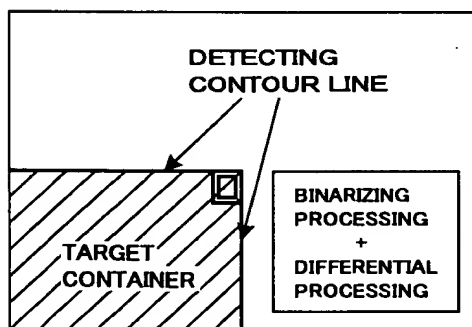
ORIGINAL IMAGE

FIG. 21(d)



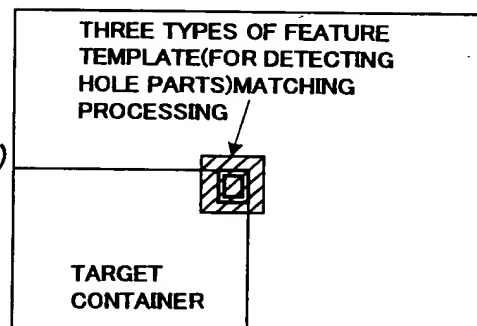
SETTING-UP OF
DETECTION REGION

FIG. 21(b)



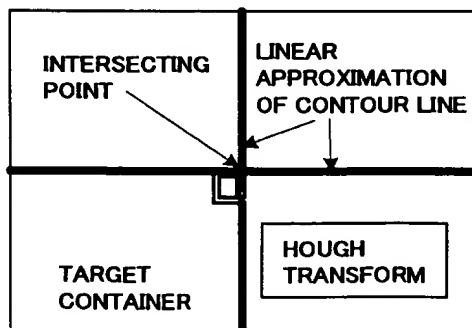
DETECTION RESULT ON
CONTAINER UPPER SURFACE

FIG. 21(e)



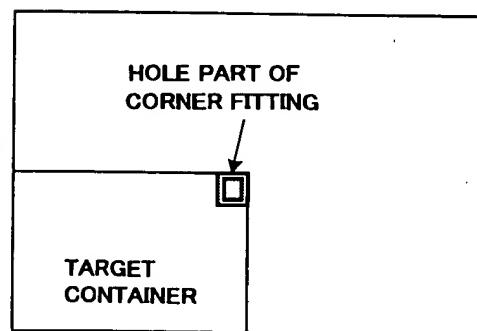
FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING

FIG. 21(c)



RESULTS OF LINEAR
APPROXIMATION OF
CONTOUR LINE AND
INTERSECTING
POINT DETECTION

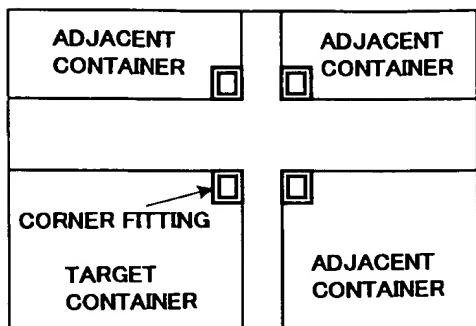
FIG. 21(f)



RESULT OF TEMPLATE
PREPARATION

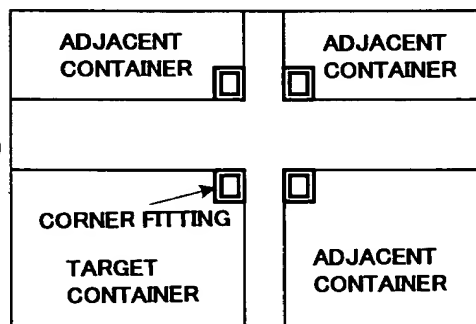
105220824T000

FIG. 22(a)



ORIGINAL IMAGE

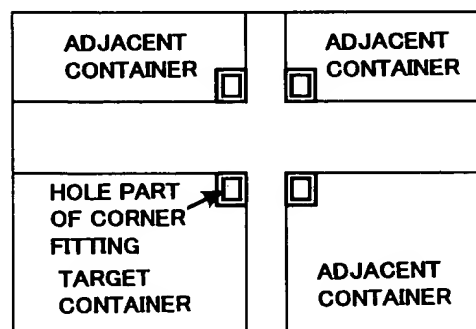
FIG. 22(b)



FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING

THREE TYPES OF FEATURE TEMPLATE
(FOR DETECTING HOLE PARTS)
MATCHING PROCESSING
(WHOLE IMAGE DATA)

FIG. 22(c)



RESULT OF TEMPLATE
PREPARATION